

Claims

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1. A wind energy system, having a wind-drivable rotor (3) with angularly adjustable rotor blades (4), a generator (8), connected directly or indirectly to the rotor (3), for generating electrical energy, in which the power output of the generator (8) is possible at variable rotor rpm, and a facility management system, which is embodied, within a predetermined wind speed range, to regulate the rotor rpm by adjustment of the rotor blade angles (5) and to turn off the operation of the system above a shutoff speed (16), characterized in that the facility management system is embodied to regulate the rotor rpm and the power output downward, by adjustment of the rotor blade angles (5), in a range between a predetermined limit speed (15) and the shutoff speed (16).

2. The wind energy system of claim 1, characterized in that the facility management system, at adequate wind speeds below the predetermined limit speed (15), is embodied to regulate the power output essentially to the value of the rated power of the system.

3. The wind energy system of claim 2, characterized in that the facility management system is embodied so as to regulate the power output, beginning at the rated power, steadily decreasingly down to the shutoff speed (16), with increasing wind speed above the predetermined limit speed (15).

4. The wind energy system of claim 3,

characterized in that the facility management system is embodied to regulate the power output and the rotor rpm as much as possible constantly to the rated power/rated rpm below the predetermined limit speed (15), and above the limit speed (15) to regulate it substantially linearly decreasingly down to the shutoff speed (16).

5. The wind energy system of one of the foregoing claims, characterized in that the facility management system is embodied to regulate the power output to approximately 40% of the rated power at the shutoff speed (16).

6. The wind energy system of one of the foregoing claims, characterized in that the facility management system is embodied to regulate the power output to the rated power, in the wind speed range from approximately 11.5 m/s to approximately 16 m/s.

7. The wind energy system of one of the foregoing claims, characterized in that the limit speed (15) is approximately 16 m/s.

8. The wind energy system of one of the foregoing claims, characterized in that the shutoff speed (16) is approximately 23 m/s.

9. A method for regulating the power output of a wind energy system of one of the foregoing claims, characterized in that the rotor rpm and the power output are regulated downward by adjustment of the rotor blade angles (5) in a range between a predetermined limit speed (15) and a shutoff speed (16).

10. The method of claim 9, characterized in that at adequate wind speeds below the predetermined limit speed (15), the power output is regulated substantially to the value of the rated power.

11. The method of claim 10, characterized in that the power output, with increasing wind speed above the predetermined limit speed (15), is regulated steadily decreasingly downward beginning at the rated power down to the shutoff speed (16).

12. The method of claim 11, characterized in that below the predetermined limit speed, as much as possible, the power output and the rotor rpm are regulated constantly to the rated power/rated rpm, and above the limit speed (15) they are regulated, essentially linearly decreasingly, down to the shutoff speed (16).

13. The method of one of claims 9-12, characterized in that the power output at the shutoff speed (16) is regulated to approximately 40% of the rated power.

14. The method of one of claims 9-13, characterized in that the power output, in the wind speed range from approximately 11.5 m/s to approximately 16 m/s, is regulated to the rated power.

15. The method of one of claims 9-14, characterized in that the limit speed (15) is approximately 16 m/s.

16. The method of one of claims 9-15,

